

50L Hydraulic lifting vacuum emulsifying machine



Hydraulic lifting vacuum emulsifying machine

# Instruction Manual



**Model : YTM-50L**

**Foreword**

Please read the following instructions carefully for personal security, enhancing producing efficiency and also for using & maintaining the machine in a right way.

# **Content**

1. Overview ----- Page 2
2. Characteristic ----- Page 2-4
3. Installation procedure ----- Page 5-12
4. Operation procedure ----- Page 12-15
5. Notes -----Page15-17
6. Configuration specification --- Page 18-21
7. Components list ----- Page 21
8. Electric box inside ----- Page 22

## 50L Hydraulic lifting vacuum emulsifying machine

### 1.Overview

VME-50L Hydraulic Lift Vacuum emulsification machine is the advantage of consolidated foreign emulsifying machine parts, according to the thousands domestic cosmetics business information feedback, which Guangzhou Yeto Machinery Co., Ltd. joint research scientists and well-known experts jointly developed one series. This machine adopts imported 316L stainless steel materials, science homogeneous structure, reasonable scraper agitation to ensure a homogeneous emulsion of organic materials to make your product more light, delicate, evenly. **Total power of the machine is 23.16kw, total electricity current: 42A**

### 2.Characteristic

2-1.This device has a unique endoscopic device, a cleaning scraper under glass, with a closed-end lighting for operations staff always observe the emulsification case materials. Main pot is heated by steam, we also designed the cooling system, the outer insulation to prevent burns staff to ensure production safety.

2-2. The main emulsifying pot has advanced scraper agitator in operation under the effect of Centrifugal force,the PTFE scraper will close to the pot wall, effectively solve the problem of the pot wall sticky material, do not stay dead, no ideal level control devices, the speed can be adjusted within 0-63 r / min range. homogenizer (frequency speed adjustment) located at the bottom, the smallest working

## 50L Hydraulic lifting vacuum emulsifying machine

capacity should be over the homogeneous head height, which can give full play to the rotor homogenizer performance, strong balance isotactic curve with the corresponding stator structure, to achieve high energy fluid shear, milling, thus ensuring paste delicate, shiny.



2-3 Water and oil phase for pre-heating and mixing the products before emulsifying to short the production time, the high speed disperser mixer speed is 1440rpm .



## 50L Hydraulic lifting vacuum emulsifying machine

2-4. advanced hydraulic lift system to ensure that the material easy to clean, it demonstrated the material, while easy to clean thoroughly.

(This tank should be full of **hydraulic oil #68** before working )





## 50L Hydraulic lifting vacuum emulsifying machine

### 3. Installation procedure:

- 3-1 Before the operation, the device must be cleaned and disinfected before feeding.
- 3-2 Connect with tap water for the vacuum pump.

#### Tap water outlet

There must be water come out from outlet when operating the vacuum system . It's for cooling down the vacuum pump.



#### Tap water Inlet

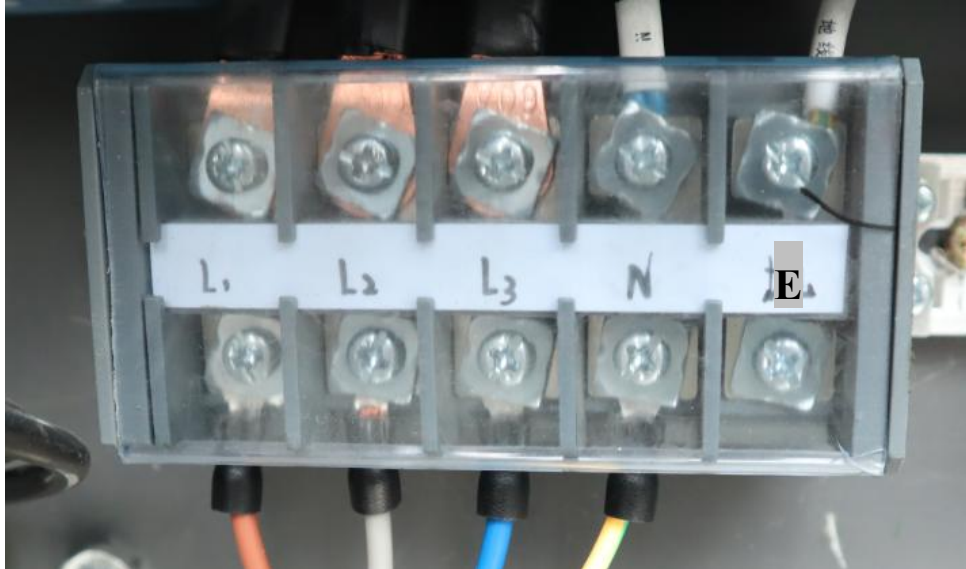
Running water is for cooling down the temperature of vacuum pump .



## 50L Hydraulic lifting vacuum emulsifying machine

3-3 Wire Connection:

3-3-1 Power wire connection: **AC380V/50Hz, 3 phase electricity, 5wires**



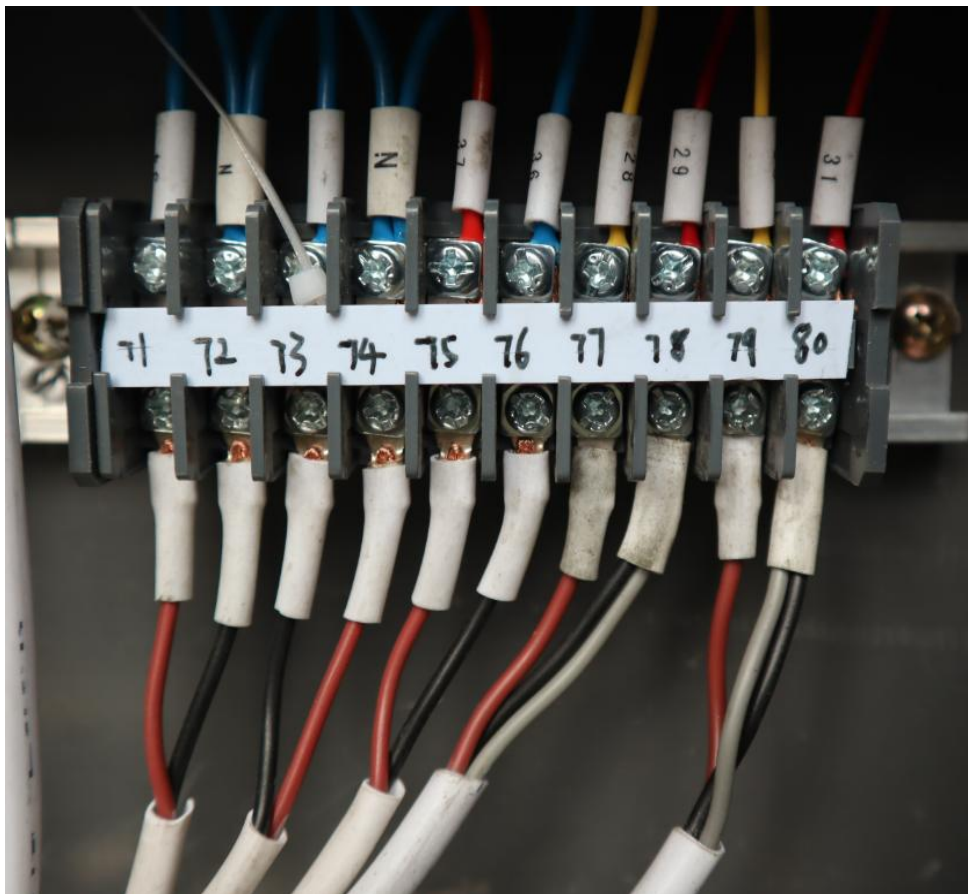
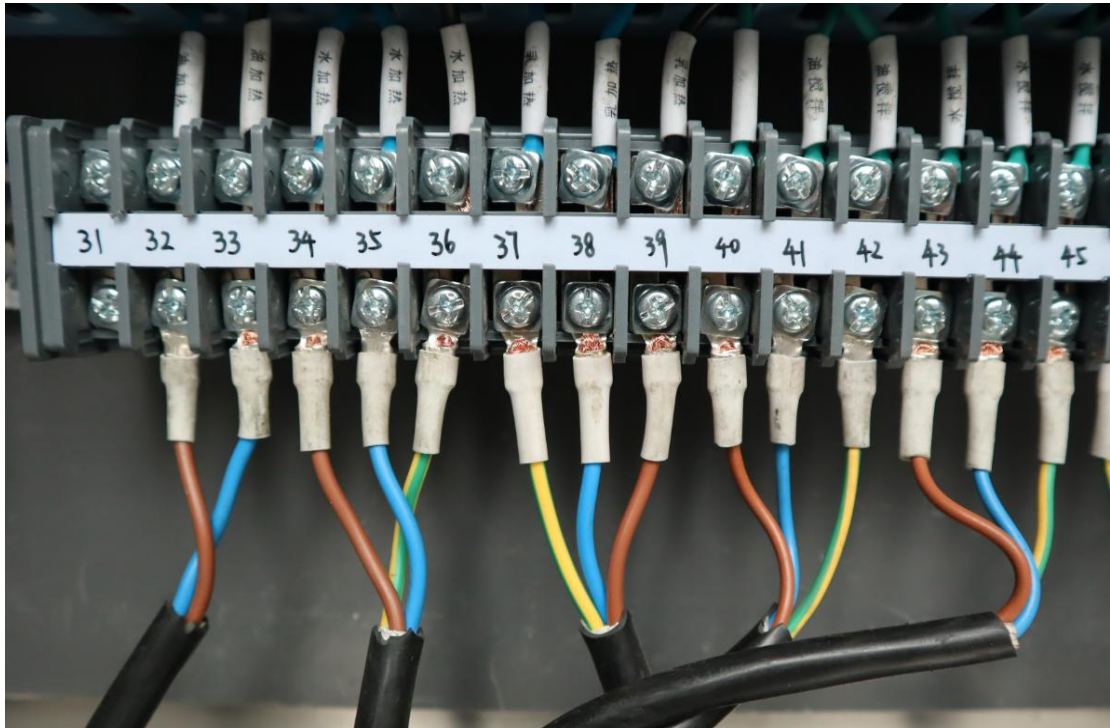
<b>Liver wire</b>	<b>L1, L2, L3</b>
<b>Neutral wire</b>	<b>N</b>
<b>Ground /Earth wire</b>	<b>E</b>

**Remark :**

After connecting the wire, then click “**Cover lifting UP**”, if the cover can not be lifted up, please change the position of any two live wires until the cover can be lifted up .

## 50L Hydraulic lifting vacuum emulsifying machine

3-3-2 wire connection of water and oil pot:





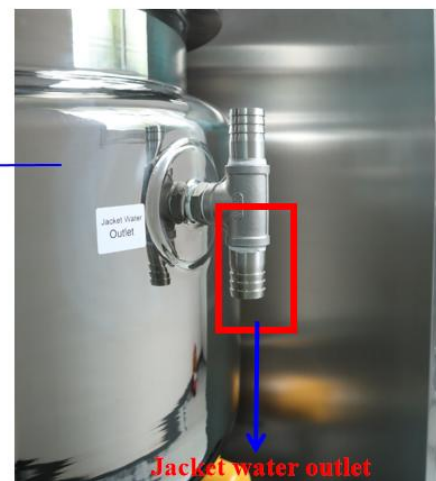
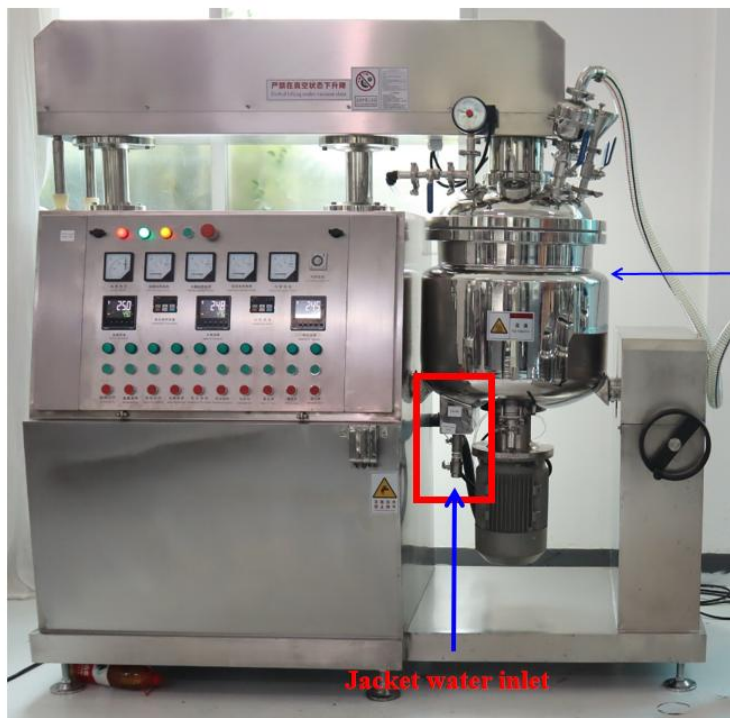
## 50L Hydraulic lifting vacuum emulsifying machine

32	<b>Oil pot heating</b>	43	<b>Water pot mixing</b>
33		44	
34	<b>Water pot heating</b>	45	<b>Oil pot temperature sensor</b>
35		77	
36		78	
40	<b>Oil pot mixing</b>	79	<b>Water pot temperature sensor</b>
41		80	
42			

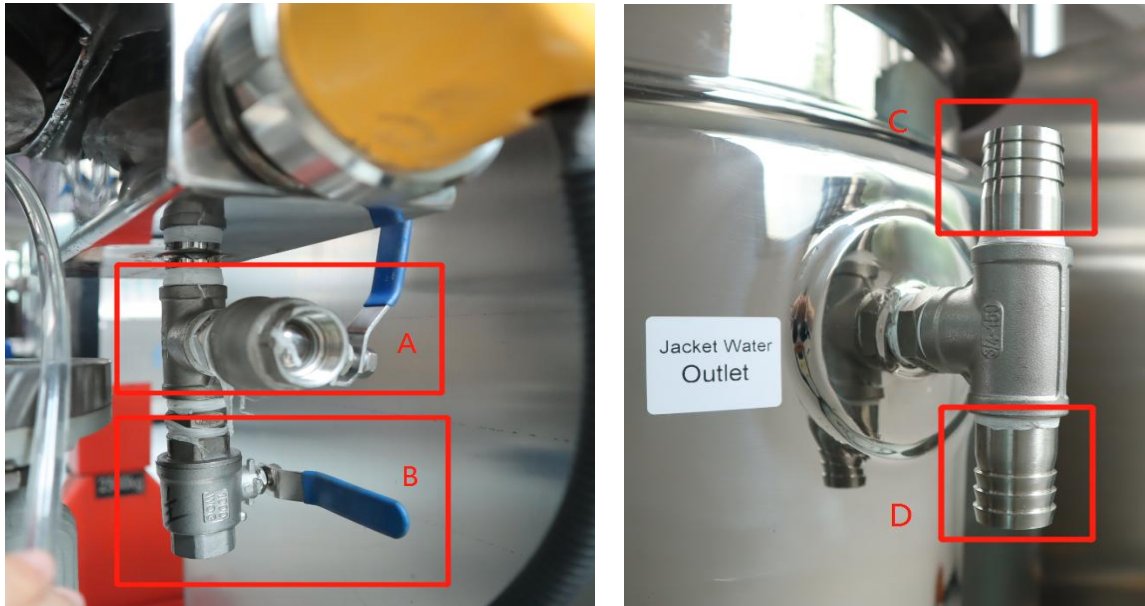
3-4 Jacket water connection .

Before heating , please make sure the jacket should be filled with water , (jacket water go in from the bottom and come out from the jacket outlet.

3-4-1 Emulsifying pot jacket water connection:



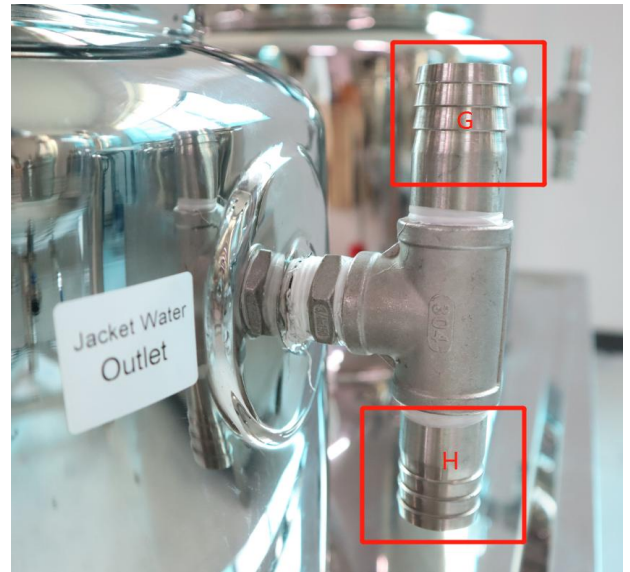
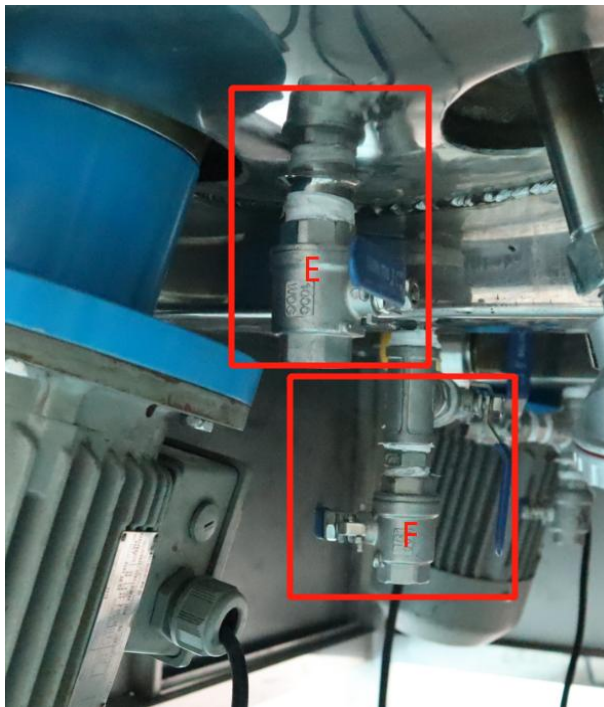
## 50L Hydraulic lifting vacuum emulsifying machine



- A :** Jacket water inlet , it's for feeding the water into the jacket to heat the products, after heating, you also can discharge the hot water by opening the blue valve.
- B:** Cooling water inlet, it's for feeding the cooling water into the jacket to cool down the products.
- C:** Steam exhaust, it's for discharging the steam during the heating process, to keep the same pressure between the jacket and room to protect the tank .
- D:** discharge the jacket water and steam water.

## 50L Hydraulic lifting vacuum emulsifying machine

3-4-2 Water and oil phase jacket water connection:



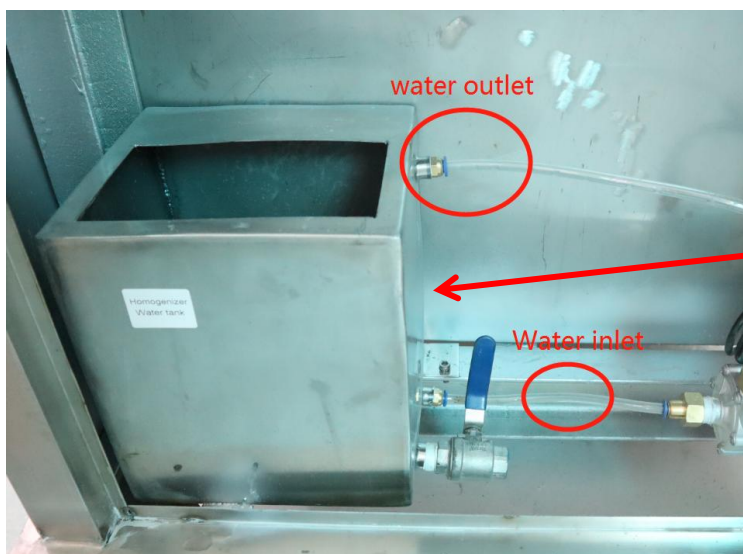
**E:** Same as emulsifying pot “A” & “B”

**F:** Bottom discharge outlet , it’s used for discharging the sewage or waste water when wash or clean the tank inside.

**G:** Same as emulsifying pot “C”

**H:** Same as emulsifying pot “D”

3-5 Before homogenizer, please ensure there is water come out from the top water outlet of the homogenizer water tank, it’s used for cooling down the homogenizer.





## 50L Hydraulic lifting vacuum emulsifying machine

### 3-6 Control panel introduction:



1	Lamp switch	13	Emulsifying pot heating temperature controller
2	Power switch / Emergency stop switch	14	Oil pot heating switch: Green :ON Red: OFF
3	Main power voltmeter	15	Oil pot mixing switch: Green :ON Red: OFF
4	Oil pot heating AM meter	16	Water pot heating switch: Green :ON Red: OFF
5	Water pot heating AM meter	17	Water pot mixing switch: Green :ON Red: OFF
6	Emulsifying pot heating AM meter	18	Emulsifying pot heating switch: Green :ON Red: OFF



## 50L Hydraulic lifting vacuum emulsifying machine

7	Homogenizer AM meter	19	Emulsifying pot mixing switch: Green : <b>ON</b> Red: <b>OFF</b>
8	Homogenizer time setting	20	Homogenizer switch: Green : <b>ON</b> Red: <b>OFF</b>
9	Oil pot heating temperature controller	21	Vacuum pump switch: Green : <b>ON</b> Red: <b>OFF</b>
10	Emulsifying pot mixing speed adjustment	22	Hydraulic UP switch: Green : <b>ON</b> Red: <b>OFF</b>
11	Water pot heating temperature controller	23	Hydraulic Down switch: Green : <b>ON</b> Red: <b>OFF</b>
12	Homogenizer speed adjustment		

### Remark :

There are a lot of heat generated when the homogenizer is running, so we suggest that the working time is less than 15minutes once, 10-15 minutes . When the actual working time reaches the setting time, the homogenizer will stop working.

## 4 . Operating procedure

4-1 .the main Pot's heating displayed by the electrical cabinet temperature thermometer . During the heating process when the pot temperature reaches 50 °C , open agitation function (slow) in order to ensure uniform heating of the material;

4-2 .When the pot is heated to 60-70 °C , stirring speed increase. When heated to 85 °C , the pot material will be completely dissolved. 85 °C can be used as the preset temperature, when the heating reaches the preset temperature, heating is automatically stopped;

## 50L Hydraulic lifting vacuum emulsifying machine

4-3 .the heating is completed, the stirring speed reduce, close the "Inlet filter valve" open "vacuum Pumping valve", press the appropriate green button to turn on the vacuum system so that negative pressure pot to -0.06Mpa.

4-4 Please **open the vacuum pump valve** before sucking the vacuum, and **close other valves**, refer to below pictures . And press “vacuum pump”

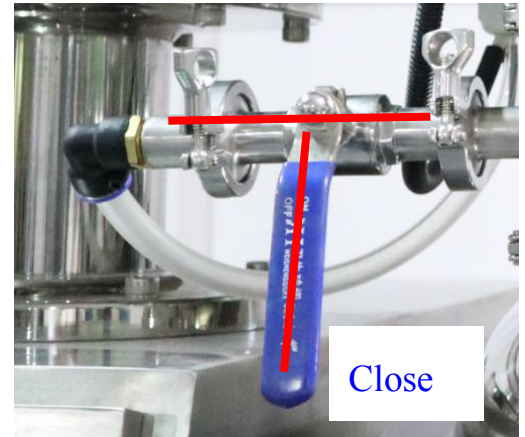
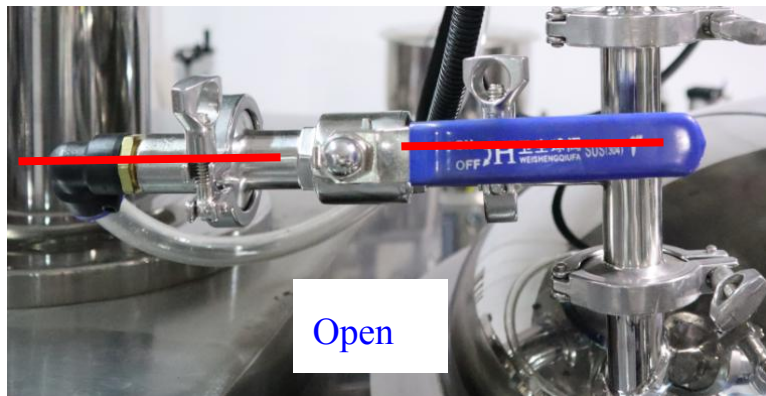


## 50L Hydraulic lifting vacuum emulsifying machine

### Valve Open and Close :

**Open** : The direction of the valve is parallel to the direction of the pipe

**Close** : The direction of the valve is perpendicular to the direction of the pipe direction .



4-4-1 when the pressure value of vacuum gauge is about **negative 0.5 (-0.5)**, close the “Vacuum pump” and vacuum valve, then we can **open the products inlet valve**, the products of water and oil phase will be sucked into the emulsifying pot . After pumping the products, then closed the **products inlet valve**. Please **close vacuum pump valve immediately first , then turn off “vacuum pump” switch..**

### Note:

**Before turning on the vacuum pump switch, please click the “ON” for 1second , then “OFF”for 1second . the same operation for several times until the water outlet from vacuum pump is pure water . As the vacuum pump is water cycling sealing system, the inside core maybe rusted to block the motor when we test the machine, above operation will prevent the motor of vacuum pump from being damaged when the vacuum pump motor is blocked.**

## 50L Hydraulic lifting vacuum emulsifying machine

- 4-5. After reaching negative standards, close the vacuum pumping valve, press the red button to close the corresponding vacuum system immediately. Then open the homogeneous system allows materials for emulsification, time, speed can be customized according to the actual situation, the time controlled by the electric meter cupboard, usually 3-10 minutes;
- 4-6. During homogeneous process, the stirring speed should not be too fast., Vacuum Pump could be opened a few times at the meantime, in favor of the removal of air bubbles within the material;
- 4-7. After opening homogenizing, mixing speed tune a little faster, and began to cool. Upon cooling the material ,please open the the cooling water valve ,so cooling water circulating , the mixing speed can be slowed down according to temperature, the degree of vacuum pot emulsion should be maintained at about -0.06Mpa;
- 4-8. When the temperature dropped to 30-40 °C, can be added flavors, preservatives and other supporting material, depending on the recipe;
- 4-9. When the material temperature drops normal temperature, closed cooling water valve, remove the vacuum lifting system can be opened (Never open under vacuum lifting system), dumping the material.

## 5 . Notes

- 5-1 Before operating each function, please make sure the electric power is stable .



## 50L Hydraulic lifting vacuum emulsifying machine

- 5-2 Don't operate the homogeneizer when there is no material or the material fails to immerse the homogenizing head.
- 5-3 **Before heating, make sure the jacket filled with water before the turn heating. Water inlet from the bottom of the pot, the pot side water overflows, indicating that the jacket has been filled with water.**
- 5-4 After the material come in the main pot , should not open the vacuum system during the heating process, the vacuum should be started after the completion to be heated, but after cooling can increase the vacuum.
- 5-5 **Before open the vacuum pump , please make sure that the vacuum pump connect to the water, also the water should be turning on when the machine is working .**
- 5-6 When washing machine, avoid water droplets into the motor, so as not to cause damage.
- 5-7 Frequency inverter speed data has been set up at the factory, do not mess change, in order to avoid data confusion, damage to the inverter.
- 5-8 After long time no use ,please check if the vacuum pump motor stuck or not before using until normal operation.
- 5-9 **Never open the lift system in a vacuum situation.**
- 5-10 The cover can not be dropped if the emulsifying pot isn't in the vertical position.
- 5-11 When a machine fails, you should immediately turn off the power and check the repair. As inconsistent with the physical description, and all kind prevail. (Special request) .




## 50L Hydraulic lifting vacuum emulsifying machine

5-12 . Operating steps of temperature setting and mixing speed

5-12-1 Mixing speed adjustment:




Press the “**Emulsifying pot stirring**” of “**Homogenizer**” , then press

“  ” until these two lights light “  ”, then adjust the mixing speed by screwing this knob “  ”.

5-12-2 Heating temperature setting:



**PV** shows the real temperature, **SV** show the setting temperature. Only need to set the temperature by these two buttons

“  ”, then the data will be saved automatically.

## 50L Hydraulic lifting vacuum emulsifying machine

# 6 . Configuration specification

1 . Vacuum emulsifying pot			
1	Capacity	<b>Design volume :60L</b> <b>working capacity:20-50L</b> Rated pressure: 0.2Mpa	
2	Structure	Three layers, double jackets <b>Inner layer:4mm SUS316L</b> Middle layer: <b>4mm SUS304</b> Heat preservation: Aluminum silicate Outer layer: <b>3mm SUS304</b>	The inner surface adopts mirror polishing, the level reaches 300U
3	Heating method	Water or conduction oil <b>electric heating, 6kw</b>  <b>Remark:</b> <b>Inner jacket can be heated or cooled by running water</b>	
4	Mixing	<b>Frame Teflon scraper</b> Blending power :3-phase/ <b>1.5KW</b> Frequency speed control :0~63r/min	The surface of the agitator is polished 300U. It is easy to see the dead angle for easy cleaning. The force of the frame stirring blade on the material is downward, and the force of the center blade on the material is upward, so that the material is formed up and down and mixed sufficiently.
5	Stirring method	bidirectional blending with ribbon, and with scraper,Food degree PTFE, high temperature resistant, Wear resisting Material : <b>SUS316L</b>	
6	Material of cover	Material SUS304	
7	Bottom homogenizer	Homogenizing Internal recycle type homogenizer power: <b>4KW</b> , frequency Speed :0~2880r/min Material : <b>SUS316L</b>	homogeneous rotor and stator should be electrolytic polished after processing and polish smooth
8	Motor	<b>Siemens</b>	
9	Reducer brand	Guomao	
10	Frequency converter	<b>Delta</b>	

## 50L Hydraulic lifting vacuum emulsifying machine

11	Polishing	300EMSH(Sanitation grade), Meet GMP requirement	
12	Pot cover	Material: <b>SUS316L</b> ,Butterfly head, thickness: 5mm included configuration : 1 lighting port with <b>24V mirror lamp</b> ; DN50 <b>Material inlet</b> port 1 pcs, built-in filter and external manual valve; <b>Vacuum pressure port</b> 1pcs, three-way interface 1pcs, one end connected to vacuum pipe, equipped with manual ball valve, one end connected to compressed air pipe, equipped with manual ball valve; vacuum outlet , equipped with manual ball valve and <b>air filter</b> . DN25 <b>CIP spray spray ball</b> 1set,equipped with sanitary grade universal spray ball; <b>vacuum pressure gauge</b> 1 pcs; DN15 <b>spice inlet</b> 1 pcs, with sanitary manual ball valve and spice cup. <b>Glass view window</b> with scrapper 1pcs	The inside and outside of upper cover is polished with 300U ,all pipe are connected with sanitary clamp ,and the spray ball can be disassembled according to the demand.  Please see the attached table 1 for the specific graphic explanation.
13	Bottom outlet	Stainless steel butterfly valve, DN25 Material : <b>SUS316L</b>	
14	Control system	Button control system	
15	Electric box	Inverter : <b>Delta</b> Electric components : <b>Schneider</b>	
16	Vacuum system	Water circulation vacuum pump, power : <b>0.81KW</b> , maximum displacement :63m <sup>3</sup> /h	
17	Lifting system	Hydraulic pump: <b>0.75kw</b> , <b>hydraulic oil</b>	
18	Tilting system	Manual tilting handwheel	
<b>2 . Water phase</b>			
1	Capacity	<b>Design volume :36L</b> <b>working capacity:10-30L</b> Rated pressure: 0.2Mpa	



## 50L Hydraulic lifting vacuum emulsifying machine

2	Structure	Three layers, double jackets <b>Inner layer:3mm SUS316L</b> Middle layer: <b>3mm SUS304</b> Heat preservation: Aluminum silicate Outer layer: <b>3mm SUS304</b>	Stainless steel mirror polished square pipe, the level up to 300U
3	Heating method	<b>electric heating, 6kw</b>	
4	Mixing	Dispenser, material : <b>SUS316L</b> power :3-phase/ <b>0.55KW</b> Stirring speed : <b>1440r/min</b>	The bottom stirring force is greater , making the dispersion and mixing completely
5	Pot bottom	Bottom outlet valve: DN51 SUS316L butterfly valve, temperature sensor, SUS304 material, with shielding wire	
6	Material of cover	Material SUS304	
7	Motor	<b>Siemens</b>	

### 3 . Oil phase

1	Capacity	<b>Design volume :36L</b> <b>working capacity:10-30L</b> Rated pressure: 0.2Mpa	
2	Structure	Three layers, double jackets <b>Inner layer:3mm SUS316L</b> Middle layer: <b>3mm SUS304</b> Heat preservation: Aluminum silicate Outer layer: <b>3mm SUS304</b>	Stainless steel mirror polished square pipe, the level up to 300U
3	Heating method	<b>electric heating, 3kw</b>	
4	Mixing	Dispenser, material : <b>SUS316L</b> power :3-phase/ <b>0.55KW</b> Stirring speed : <b>1440r/min</b>	The bottom stirring force is greater , making the dispersion and mixing completely
5	Pot bottom	Bottom outlet valve: DN51 SUS316L butterfly valve, temperature sensor, SUS304 material, with shielding wire	
6	Material of cover	Material SUS304	

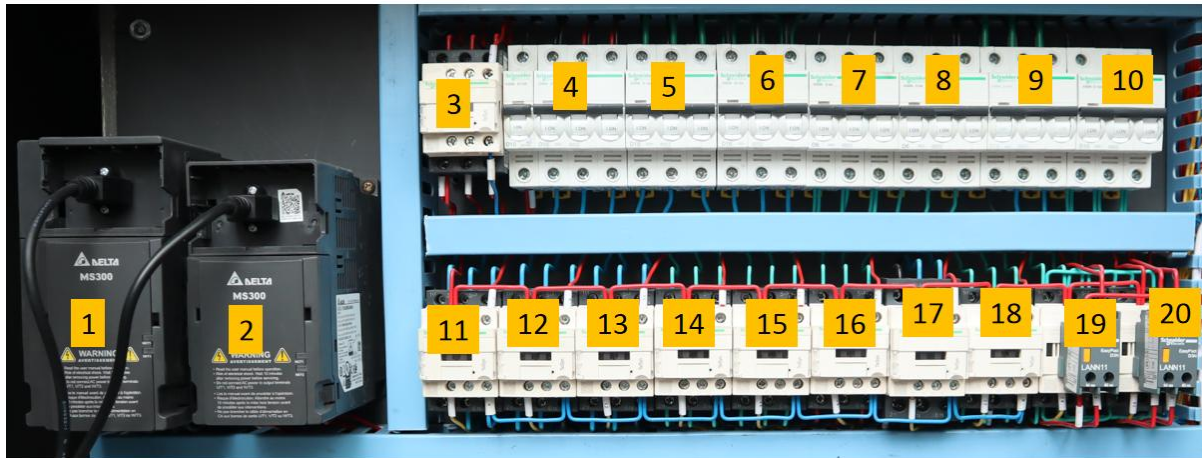
## 50L Hydraulic lifting vacuum emulsifying machine

7	Motor	Siemens	
Others	The discharge valve at the bottom of the main pot adopts manual bottom sticking ball valve: The temperature sensor and the bottom of the pot are seamlessly connected: Main stainless steel material should meet GB24511-2009 standard: <b>AC 380V/50Hz, 3phase</b>		
Dimension	<b>Main pot: 194*84*191cm</b> <b>Water and oil pot : 130*70*104cm</b>		

## 7 . Components list

No.	Description	Brand	Qty
1	Mixing motor	Siemens	3 PCS
2	Homogenizer motor	Siemens	1 PCS
3	Frequency converter for top mixing	Delta	1 set
4	Frequency converter for homogenizer	Delta	1 set
5	Bearing	Japan NSK	1 set
6	Vacuum pump	YZ,China	1 set
7	Hydraulic pump	FY,China	1 set
8	Temperature sensor	zhengtai	3 pcs
9	Temperature controller	Omron	1 pcs
10	PTFE/Teflon scraper	/	4pcs
11	Breaker	Schneider	5pcs
12	Contactora	Schneider	1 set

## 8 . Electric box inside



1	<b>Inverter:</b> Main pot mixer	11	<b>Contactors:</b> oil pot heating
2	<b>Inverter:</b> Homogenizer	12	<b>Contactors:</b> water pot heating
3	<b>Breaker:</b> Main power	13	<b>Contactors:</b> main pot heating
4	<b>Breaker:</b> oil pot heating	14	<b>Contactors:</b> oil pot mixing
5	<b>Breaker:</b> water pot heating	15	<b>Contactors:</b> water pot mixing
6	<b>Breaker:</b> main pot heating	16	<b>Contactors:</b> main pot mixing
7	<b>Breaker:</b> water and oil pot mixing	17	<b>Contactors:</b> homogenizer mixing
8	<b>Breaker:</b> Main pot mixing	18	<b>Contactors:</b> vacuum pump
9	<b>Breaker:</b> Homogenizer mixing	19	<b>Contactors:</b> hydraulic up
10	<b>Breaker:</b> vacuum pump and hydraulic Up/Down	20	<b>Contactors:</b> Hydraulic down